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WASHINGTON, DC 20005-3096

EXAMINER

GRAY, LINDA L

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,218

Applicant(s)

LAMPL, JOHN

Examiner

Linda L. Gray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-16-04, 9-1-04, 5-4-05, 8-25-05, 9-15-05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-35 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Detailed Action

Election/Restriction

1. Applicant's election without traverse of **claims 21-35** in the reply filed on 8-25-05 is acknowledged. **Claims 1-20** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant's request for rejoinder of the non-elected method claims upon allowance of counterpart elected claims is noted.

Specification

2. The specification is objected to because of the following informality: "22" (para 0015, L 4) should be -- 14 --.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP 608.01(o). Correction of the following is required: **claim 31** recites "20in²/gram or more" which does not have proper antecedent basis in the specification.

Claim Objections

4. **Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.**

Applicant is required to cancel the claim, amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Specifically, the one limitation of claim 27 is already recited in claim 21, line 3.

Claim Rejections - 35 USC 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 30 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Renger (US 4,379,010).

Claim 30, Renger teaches lightweight (c 1, L 52-54) airfoil 16 including the following: **(a)** frame 22 and **(b)** skin 26 attached to frame 22 with an adhesive (c 2, L 36-58; c 3, L 41-55). Airfoil 16 is part of toy 10 which is model aircraft. Frame 22 is of an expanded polystyrene material (c 3, L 13-15).

With respect to the limitation in claim 30 that the frame is "formed from" a single sheet, this limitation refers to a method of providing the claimed frame and is a product-by-process limitation. MPEP 2113 indicates that though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself; that the patentability of a product does not depend on its method of production; that if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In this case, the frame is made by the same claimed process in that Renger teaches that frame 22 is "formed from" a single sheet (c 3, L 13-40).

Claim 35, Renger teaches that frame 22 has a thickness of 1 to 4 mm. Note that certain values for the thickness for frame 22 fall within the claimed range and thus anticipate those claimed values.

Claim Rejections - 35 USC 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21-22, 24-29, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Renger in view of Silvergate (US 5,030,157).

Claims 21 and 27, Renger teaches lightweight (c 1, L 52-54) airfoil 16 including the following: **(a)** frame 22 and **(b)** skin 26 attached to frame 22 (c 2, L 36-58). Airfoil 16 is part of toy 10 which is model aircraft (c 2, L 36-37).

***Claims 21 and 27**, Renger teaches that the weight of the material for frame 22 of airfoil 16 is chosen to optimize the performance of toy 10 (c 4, L 6-9). Thus, Renger recognizes that the weight of frame 22 affects the performance of toy 10 but does not teach that airfoil 16 has an area-to-weight ratio of 30in²/gm or more.*

Silvergate teaches lightweight (c 1, L 43-46) airfoil 23 including a frame (Fig 2; c 2, L 51-56). Silvergate teaches that airfoil 23 must be of a sufficiently low mass to provide a high overall surface area-to-weight-ratio which contributes to toy 1 being able to be played over short distances with a low velocity (c 2, L 56-59; c 1, L 35-42). Thus, Silvergate recognizes the airfoil area-to-weight ratio is a result-effective variable parameter in that the lower the mass for a given airfoil, the higher the area-to-weight ratio and the better suited toy 1 (which includes airfoil 23) is for use over short distance with a low velocity.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Renger a determination of the optimum area-to-weight ratio for airfoil 16 through routine experimentation to optimize the ability to play with toy 10, which is a model aircraft, over short distance with low velocity, such as in a home's backyard or a recreation room.

Claim 22, Renger teaches that frame 22 is of an expanded polystyrene material (c 3, L 13-15). With respect to the limitation in claim 22 that the frame is "formed from" a single sheet, this limitation refers to a method of providing the claimed frame and is a product-by-process limitation. MPEP 2113 indicates that **(1)** though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself; **(2)** that the patentability of a product does not depend on its method of production; **(3)** that if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In this case, the

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Renger teaches that frame 22 is made by the same claimed process in that Renger teaches that frame 22 is "formed from" a single sheet (c 3, L 13-40).

Claim 24, Renger teaches that frame 22 has a thickness of 1 to 4 mm (c 2, l 51-53). Note that certain values for the thickness for frame 22 fall within the claimed range of about 2-8 mm. Thus, the disclosed range overlaps the claimed range creating a prima facie case of obviousness.

Claim 25, Renger teaches that frame 22 is attached to skin 26 with an adhesive (c 3, L 41-55).

Claim 26, Renger teaches frame 22 is cored in that sheet 56 is diecut to remove excess pieces therefrom to form apertures 54 thus creating frame 22 (c 3, L 29-55).

Claims 31-32, Renger teaches that the weight of the material for frame 22 of airfoil 16 is chosen to optimize the performance of toy 10 (c 4, L 6-9). Thus, Renger recognizes that the weight of frame 22 affects the performance of toy 10 but does not teach that airfoil 16 has an area-to-weight ratio of $20\text{in}^2/\text{gm}$ or more (claim 31) or $30\text{in}^2/\text{gm}$ or more (claim 32).

Silvergate teaches lightweight (c 1, L 43-46) airfoil 23 including a frame (Fig 2; c 2, L 51-56). Silvergate teaches that airfoil 23 must be of a sufficiently low mass to provide a high overall surface area-to-weight-ratio which contributes to toy 1 being able to be played over short distances with a low velocity (c 2, L 56-59; c 1, L 35-42). Thus, Silvergate recognizes the airfoil area-to-weight ratio is a result-effective variable parameter in that the lower the mass for a given airfoil, the higher the area-to-weight ratio and the better suited toy 1 (which includes airfoil 23) is for use over short distance with a low velocity.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Renger a determination of the optimum area-to-weight ratio for airfoil 16 through routine experimentation to optimize the ability to play with toy 10, which is a model aircraft, over short distance with low velocity, such as in a home's backyard or a recreation room.

Claims 28-29 and 33-34, Renger does not teach that for airfoil 16 a ratio of an area of frame 22 to an area defined by frame 22 is less than 0.10 (claims 28 and 33) or less than 0.05 (claims 29 and 34).

However, in Renger a smaller area for frame 22 would be provided by diecutting larger apertures 54 in sheet 56 when forming airfoil 16 so that for a given area covered by frame 22, the weight of frame 22 would decrease providing for a toy 10 that is more lightweight which Renger desires. The ratio of the area of frame 22 to the area covered by the frame is a result-effective variable parameter affecting the weight of toy 10.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Renger a determination of the optimum frame-22-area to area-covered-by-frame-22 ratio through routine experimentation to provide a toy 10 which is as lightweight as possible which Renger desires.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Renger view of Silvergate as applied to claims 21-22, 24-29, and 31-34 above, and further in view of Latham (US 5,249,542) and Curtis (US 3,740,009).

Claim 23 Renger teaches skin 26 to be a plastic such as polyester (c 2, L 48-49, 61-64).

Renger does not teach skin 26 to be biaxial oriented polypropylene.

Latham teaches an airfoil having a skin 128 of any suitable material such as mylar or polypropylene (c 5, L 41-48) and Curtis teaches that airfoils having a plastic skin that is biaxially oriented is preferred because biaxially oriented skins are tear resistant (c 6, L 33-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Renger that skin 26 is biaxially oriented polypropylene because Latham teaches in the same art of airfoils having skins attached to a frame that such a material is conventional in the art and it is obvious to replace one skin material with another art recognized alternative skin material known to also be successful in the art where Curtis indicates that airfoils having a plastic skin that is biaxially oriented is preferred because biaxially oriented skins are tear resistant.

10. Claims 21-22, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan (US 3,533,186) in view of Silvergate.

Claims 21 and 27, Sullivan teaches lightweight (c 2, L 3-5) airfoil 14 including the following: **(a)** frame 20 and **(b)** skin 18 attached to frame 20 (c 1, L 14-20; c 2, L 34-41). Airfoil 14 is part of toy 10 which is model aircraft (c 2, L 34-41).

Claims 21 and 27, Sullivan indicates frame 20 to weigh one-half as much as frame 20 would weigh if solid (c 1, L 60-61). Thus, Sullivan recognizes that decreasing the weight of frame 20 provides a more lightweight airfoil 14 and thus aircraft 10 (c 2, L 3-5) but does not teach that airfoil 14 has an area-to-weight ratio of $30\text{in}^2/\text{gm}$ or more.

Silverglate teaches lightweight (c 1, L 43-46) airfoil 23 including a frame (Fig 2; c 2, L 51-56). Silverglate teaches that airfoil 23 must be of a sufficiently low mass to provide a high overall surface area-to-weight-ratio which contributes to toy 1 being able to be played over short distances with a low velocity (c 2, L 56-59; c 1, L 35-42). Thus, Silverglate recognizes the airfoil area-to-weight ratio is a result-effective variable parameter in that the lower the mass for a given airfoil, the higher the area-to-weight ratio and the better suited toy 1 (which includes airfoil 23) is for use over short distance with a low velocity.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Sullivan a determination of the optimum area-to-weight ratio for airfoil 14 through routine experimentation to optimize the ability to play with toy 10, which is a model aircraft, over short distance with low velocity, such as in a home's backyard or a recreation room.

Claim 22, Sullivan teaches that frame 20 is of an expanded polystyrene material (c 4, L 8-10). With respect to the limitation in claim 22 that the frame is "formed from" a single sheet, this limitation refers to a method of providing the claimed frame and is a product-by-process limitation. MPEP 2113 indicates **(1)** that though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself; **(2)** that the patentability of a product does not depend on its method of production; **(3)** that if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In this case, Sullivan teaches that frame 20 is "formed from" a single sheet (c 3, L 23-29).

Claim 25, Sullivan teaches that skin 18 is attached to frame 20 with an adhesive (c 1, L 14-20; c 2, L 34-41; c 3, L 60-73).

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan in view of Silverglate as applied to claims 21-22, 25, and 27 above, and further in view of Latham and Curtis.

Claim 23, Sullivan teaches skin 18 to be balsa wood, mylar, vinyl, woven fabrics, or non-woven paper-base materials (c 3, L 59-73).

Sullivan does not teach skin 18 to be biaxial oriented polypropylene.

Latham teaches an airfoil having a skin 128 of any suitable material such as mylar or polypropylene (c 5, L 41-48) and Curtis teaches that airfoils having a plastic skin that is biaxially oriented is preferred because biaxially oriented skins are tear resistant (c 6, L 33-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Renger that skin 26 is biaxially oriented polypropylene because Latham teaches in the same art of airfoils having skins attached to a frame that such a material is conventional in the art and it is obvious to replace one skin material with another art recognized alternative skin material known to also be successful in the art where Curtis indicates that airfoils having a plastic skin that is biaxially oriented is preferred because biaxially oriented skins are tear resistant.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan in view of Silvergate as applied to claims 21-22, 25, and 27 above, and further in view of Renger.

Claim 24, Sullivan does not teach that frame 20 has a thickness of about 2 to 8 mm.

Renger teaches that frame 22 has a thickness of 1 to 4 mm. Note that certain values for the thickness for frame 22 fall within the claimed range and thus anticipate those claimed values.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Sullivan that frame 20 is of a thickness of 1 to 4 mm as suggested by Renger such that frame 20 will be of a weight that allows for optimal fly of toy 1 in that this thickness for frame 22 of Renger contributes to the weight of flying toy 10 where the weight is of a value that allow for optimal flying (see Renger at column 4, lines 6-9). Note also that Sullivan does not provide a restriction for the thickness of frame 20 such that one skilled in the art would not consider this modification of Sullivan to be detrimental to toy 1 of Sullivan.

Examiner Comments

13. With respect to claims 26 and 30, Sullivan does not teach that frame 20 is cored nor would it have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Sullivan a cored frame 20 in that frame 20 of Sullivan is not intended to have hollow portions therethrough as a cored frame would have but is specifically intended to have alternating surface portions and recesses (c 1, L 46-68).

Art of Record

14. The following prior art is made of record: **(a)** Yurkoski (US 2002/0019190 A1) teaches a boomerang air foil with a maximum area-to-weight ratio of approximately 18in²/gm, see Figure 6.

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Also, see paragraph 19 where it is indicated that the range for the ratio can be dramatically broadened beyond 6 to 1. However, q maximum upper limit is shown in Figure 6 at approximately $18\text{in}^2/\text{gm}$ which is within the Don't Fly Zone; **(b)** Perthou (US 5,868,596) teaches a boomerang air foil that is light weight in relation to its surface area to establish a descent in a horizontal plane as a spinning body in a slow descent. The area of each air foil can be 3in^2 ; **(c)** Boswell (US 4,295,290) teaches that the time of flight for a flying toy depends on the weight of the toy and the area of the airfoil. The larger the area-to-weight ratio of the airfoil the longer the time of flight; **(d)** Wanner (US 1,893,791) teach airfoils (wings) for a toy aircraft including a wooden frame having wax paper skin 1 adhered thereto; **(e)** Hermann et al. (US 4,388,777) having an area-to-weight airfoil ratio of 35 to 45 cm^2/g ; and **(f)** Madhavan et al. (US 2003/0075862 A1) teaches an airfoil having an area-to-weight ratio that serves to maximize the airfoil's properties as a moving implement and as a sticking implement.

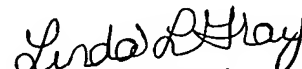
Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Gray whose telephone number is (571) 272-1228. The examiner can normally be reached Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla, can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public Pair. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-1997 (toll-free).

llg 
November 14, 2005


LINDA GRAY
PRIMARY EXAMINER